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ABSTRACT

Three preschool children were observed intensively for three years to examine the ways they attempted to organize and classify the world of television. Of interest were children's changing abilities to differentiate six adult-perceived categories of television fare: cartoons, advertisements, news, adult shows, children's shows, and "Sesame Street." In addition, children's understanding of the relationship between television characters and their shows, the concept of target audience or producer's intent, and the temporal organization or scheduling of the television world were explored. The acquisition of the six categories was found to occur in the following order: advertisements, cartoons, "Sesame Street," news, children's shows, and adult shows. The children were unable to organize television fare consistently in the categories until after the age of three; they were able to distinguish all six categories by the age of four and one-half. After the age of two, children passed through a series of steps such that by age five they recognized show beginnings and endings and were able to state the specific times and days of certain shows, reflecting a relatively solid grasp of television's temporal organization. Still to be grasped by the five-year-old children were the exact nature of the links between characters and their shows and the concept of target audience. (Author/RL)

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PRESCHOOLERS' CLASSIFICATION OF THE TELEVISION WORLD

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Abstract

Three preschool children were observed intensively for three years to examine the ways in which preschoolers attempt to organize and classify the world of television. Of interest were children's changing abilities to differentiate six adult-perceived categories of television fare (cartoons, advertisements, news, adult shows, children's shows, and Sesame Street). In addition, children's understanding of the relationship between television characters and their shows, the concept of target audience or producer's intent, and the temporal organization or scheduling of the television world were explored.

Acquisition of the six categories was found to occur in the following order: advertisements, cartoons, Sesame Street, news, children's shows, and adult shows. Until the age of 3, the children were unable to use any of these categories consistently in organizing television fare. By the age of 4, they were able to distinguish advertisements, cartoons, and Sesame Street, and by the age of 4-1/2, they were able to distinguish the other three categories.

Two year olds had no understanding of producer's intent, of the temporal organization of television, or of the relationship between characters and the shows on which they appear. During the following years, children passed through a series of steps such that by age 5 they recognized show beginnings and endings, and were able to state the specific times and days of certain shows, reflecting a relatively solid grasp of television's temporal organization. Still to be grasped by the 5 year old was the exact nature of the links between characters and their shows and the concept of target audience.

Preschoolers' Classification of the Television World

Leona M. Jaglom, Anitra Fagre, and Paula G. Wilder

I. Introduction

To a sophisticated television viewer, the world of television is a neatly packaged, clearly organized, simple and convenient form of entertainment. An adult can choose to watch only his favorite talk shows, to turn the volume off when commercials appear on the screen, to turn the set on only at 7:00 P.M. for the national news, or, if the weather and sports are his primary interests, to watch only the last ten minutes of the local news.

As simple as this may sound, each of these choices is dependent upon a complex classification system. In choosing to watch only talk shows, the adult must be able to discriminate them from soap operas or situation comedies, must know the time at which they appear, the channel which broadcasts them, or at least know where to look to find this information. In order to turn the volume off when commercials appear, the adult must recognize the identifying features of advertisements such as familiar jingles, the "person displaying object" format, sudden increases in volume, or lettering across the screen. In short, to have such control over the medium of television, one must be familiar enough with it to have organized its various show types and their individual visual and audio features into discrete, clearly defined categories.

The preschool child is faced with the task of developing this system of classification. She cannot possibly watch television for the first time and know immediately that some shows are fictional dramas, some are designed to make people laugh, some are mysteries meant to be frightening, and others are intended to provide accurate information about the real world. Just as a child does not one day awaken with a full vocabulary of words with which to communicate, but progresses through a series of developmental stages of language, so she must gradually acquire a category system with which to organize the communications of the television world.

In a previous report (Jaglom, Wilder, and Fagre, 1979), the development of the child's understanding of the relationship between television content and the real world was explored. In this report, the development of the preschool child's understanding of the relationship between various types of television fare within the television world and the categories they establish to organize this fare will be examined. To be discussed are children's abilities to differentiate among specific shows, to group shows according to common characteristics or features, to recognize their beginnings and endings, and to learn the time schedules of various shows.

Given the dearth of information about the development of a system for classifying the television world, several possibilities suggest themselves. For example, amount of exposure to a certain type of show may determine the age at which it is distinguished from other show types. Alternatively, children may first recognize their favorite shows as discrete television entities, making preference the crucial factor. It is also possible, however, that a metric of simplicity governs first category distinctions. Thus, even though Sesame Street may be most familiar to and preferred by children, its complex structure comprising many diverse characters and settings passing quickly on and off the screen may make it difficult for preschoolers to identify as one discrete program. The kinds of cues to which children attend in attempting to distinguish or identify such shows may also be multiple. For example, children may rely primarily on the characters involved, the show's music or theme song, its visual appearance or set, or some combination of these factors. In exploring the development of children's organization of the television world, one must examine not only the age at which children differentiate between specific types of shows (e.g., cartoons, commercials, news, and Sesame Street), but one must also attempt to understand what other distinctions they make, the logic upon which those distinctions are made, and the ways in which that logic changes with age.

These issues have been addressed in a longitudinal study of early television competence. Of interest were children's spontaneous comments about shows as well as their performance on sorting and classification tasks designed to examine these issues. The distinctions children made between specific shows, the categories into which they grouped these shows, and the logic exhibited through their correct and incorrect distinctions and groupings were solicited from a small sample of subjects who were followed intensively over a three year period. This design--involving intensive examination of a small number of subjects--models Piaget's study of the sensori-motor period (1952, 1954) and Roger Brown's study of the origins of language (1973). Though each of these studies involved only three subjects, they have produced highly robust findings.

II. Method

Three¹ children participated in a three year longitudinal study extending from the time they were 2 to 5 years of age. Subjects were seen at bi-weekly home visits lasting one and a half to two hours. The experimenter engaged the children in a variety of television-related tasks and observed approximately one half hour of children's natural television viewing. Tasks were designed to probe children's knowledge and understanding of

¹The sample originally consisted of four subjects, but one was sufficiently unusual and laggard in her overall development as well as in her television viewing behavior to warrant the removal of her data from the analysis.

television content. For example, a guessing game was played in which the child and the experimenter alternated hiding television characters behind their backs, providing one another with clues regarding the character's attributes, and guessing which character was hidden. Another task involved sorting pictures of various types of television fare into piles of cartoons, news shows, commercials, children's shows, real shows or pretend shows. In addition, on a quarterly basis, subjects viewed experimental videotapes featuring various types of television fare. Verbatim transcripts were made of all sessions, and subjects' parents kept diaries of all television-related comments and experiences.

All instances in which children made comments indicating attempts to classify or distinguish between types of television content were extracted from the transcripts. This information included spontaneous remarks made by the subjects while watching television or playing with television-related toys, as well as their responses to probes made by the experimenter. These structured probes by the experimenter were of two types. The first involved task situations in which children were asked to sort piles of photographs of television fare into specific groups, or to re-create various types of television action with the help of props inside a wooden television frame. In the second structured situation, the experimenter asked questions regarding the specific television shows being watched during the particular session.

III. Analysis

All statements, bits of information, or items pertaining to categories used by adults to classify the elements of the television world were first grouped according to the specific categories to which they pertained. These categories were cartoons, advertisements, news, adult shows, children's shows, and, a subcategory of children's shows, Sesame Street. This last subcategory was included because many of children's first attempts at classification were found to revolve around the identification of Sesame Street segments.

A second, more qualitative means of coding the data consisted of coding bits of information for recognition of show beginnings, endings, and interruptions, show scheduling knowledge, and understanding of character-show connections. As well as providing insight into the process behind specific category recognitions, examination of these issues sheds light on the child's other attempts at organizing the world of television. When an item was relevant to both the development of specific categories and to the broader process of organization, it was scored twice.

Data were examined in six month sections. In the first step of the analysis, the specific ages at which each of the children mastered the specific adult-perceived program categories as well as the average age of mastery across all three children was examined. In the second, the

process by which these categories are created and cues used in classifying the television world were explored qualitatively.

Children's abilities to separate shows into categories were traced using strict definitions of program types. These types were defined by their content regardless of their visual appearance. For example, an animated advertisement looks like a cartoon, but its content indicates that it is an advertisement as well. Conversely, cartoons and other children's programs often share the same intent, but differ in form. The fact that two program types may thus share either form or purpose and may be classified two ways, is an understandable source of confusion for children. Items indicating such confusion were labelled "duals." Items were considered to show either correct understanding of a program type, incorrect understanding, or they were considered to be "dual" in nature (see examples below). Understanding was incorrect when any part of a statement or action violated the adult definition of a category, correct when it corresponded to the adult notion of that category; "dual correct" when children focussed on the content of a show rather than or in conjunction with its visual appearance (e.g., an animated advertisement is an advertisement even though it looks like a cartoon) and "dual incorrect" when the visual appearance of the show or show characters took precedence over the content of the show (e.g., when Flip Wilson or Fonzie is on Sesame Street, it is not Sesame Street).

The child received credit for category recognition when judgments about this category were consistently greater than 75% correct. Based on all the data, independent judges obtained reliability of 92.5% in the correct, incorrect, and dual assignment of items. Final scores were agreed upon through discussion of individual items.

It should be noted that classification tasks were especially important in uncovering the point at which children seemed to correctly distinguish the program categories. In this task, children were given 5 to 9 pictures from television shows and were asked to either free-sort them or to make piles of specific categories. Many of the children's category judgments were also made spontaneously as can be seen in the examples given below. (Note: i=incorrect, c=correct.)

Advertisements/Commercials

Example (i): Child says The Electric Co. is a commercial. (Kathy, 4:3)

Example (c): Out of a pile of 6 photographs containing 4 advertisements, child labels the 4 advertisements commercials.
(Kathy, 3:9)

Cartoons

Example (i): Child calls three non-animated children's shows "cartoons." (John, 2:8)

Example (c): Out of a group of 5 children's shows, child picks out the only two cartoons and labels them "cartoons." (Donny, 4:4)

News

Example (i): Includes commercial in news pile and excludes the only three news pictures. (Kathy, 3:9)

Example (c): Child says "That's the news" having only heard the news audio on the television screen. The picture had not come in yet. (Donny, 4:6)

Adult Shows

Note: This category includes all shows made with adult or family audiences in mind. This potentially includes news and advertisements.

Example (i): Child includes The Electric Company (children's show) in pile of adult shows and excludes two adult shows from pile. (Donny, 5:2)

Example (c): Child correctly sorts pile of various shows into adult shows, leaving out all children's shows. (Kathy, 4:4)

Children's Shows

Note: This category includes all shows made with child audiences in mind.

Example (i): Child labels all the shows he watches "kids shows" and he watches some adult shows such as soaps and news. (Donny, 2:11)

Example (c): Child points out 5 children's shows interspersed with other shows and labels them as such. (Kathy, 4:4)

Sesame Street

Example (i): Child says that only the bits with puppets are Sesame Street and denies that anything else is on Sesame Street. (Donny, 2:11; Kathy, 2:1)

Example (c): Child correctly identifies all Sesame Street bits on videotape consisting of the gamut of types of television fare. (Donny, 4:6)

IV. Category Acquisition Results

Reported here is the six month interval during which each child consistently began to distinguish each category correctly more than 75% of the time. In addition, information regarding children's handling of dual items in each category is reported. The average six month interval across all three children during which each category was correctly distinguished from the others is given as well (see Table 1).

A. Advertisements

John (2:0 - 2:6)

Duals: Animated advertisements were consistently distinguished from cartoons after 4:6.

Kathy (3:7 - 3:11)

Duals: Animated advertisements were consistently distinguished from cartoons after 4:2.

Donny (3:7 - 3:11)

Duals: Animated advertisements were consistently distinguished from cartoons after 4:1.

Note: Donny is confused from 4:7 - 4:11 when only 60% of the items presented were answered correctly due to confusion with the News category.

Average Six Month Interval of Acquisition: 3:0 - 3:6.

B. Cartoons

John (2:7 - 2:11)

Duals: Animated Sesame Street bits were distinguished from cartoons at 4:3. Cartoons were also distinguished from animated advertisements after 4:6.

Kathy (4:0 - 4:6)

Duals: Kathy distinguished cartoons from animated Sesame Street bits after 4:3.

Donny (3:7 - 3:11)

Duals: Donny correctly distinguished cartoons from both animated advertisements and Sesame Street bits at 4:1 and later.

Average Six Month Interval of Acquisition: 3:7 - 3:11 (early in this interval)

C. Sesame Street

John (4:0 - 4:6)

Duals: Animated Sesame Street bits were correctly distinguished from cartoons after 4:3.

Kathy (3:0 - 3:6)

Duals: Kathy confused Sesame Street with other shows when characters from those other shows appeared on Sesame Street until 4:5.

Donny (4:0 - 4:6)

Duals: Donny correctly distinguished animated Sesame Street bits from cartoons after 4:2.

Average Six Month Interval of Acquisition: 3:7 - 3:11 (late in this interval).

D. News (No duals in this category)

John (3:7 - 3:11)

Kathy (4:7 - 4:11)

Donny (4:0 - 4:6) NOTE: Donny had much confusion at 4:7-4:11 when he got only 25% of the News items correct, confusing them with commercials or pictures of shows involving one man or woman facing the camera as do anchormen and women.

Average Six Month Interval of Acquisition: 4:0 - 4:6

E. Children's Shows (No duals in this category)

John (4:7 - 4:11)

Kathy (4:0 - 4:6)

Donny (4:0 - 4:6)

Average Six Month Interval of Acquisition: 4:0 - 4:6 (late in this interval)

F. Adult Shows (No duals in this category)

John (4:7 - 4:11)

Kathy (4:0 - 4:6)

Donny (very little data--uncountable)

Average Six Month Interval of Acquisition: 4:0 - 4:6

Table 1

Summary Table of Average Intervals of Acquisition

<u>Category</u>	<u>Interval of Acquisition</u>
Advertisements	3:0 - 3:6
Cartoons	3:7 - 3:11 (early)
Sesame Street	3:7 - 3:11 (late)
News	4:0 - 4:6
Children's Shows	4:0 - 4:6 (late)
Adult Shows	4:0 - 4:6

V. Category Acquisition--Discussion

A. Advertisements

Advertisements constitute the first category acquired when the three children's ages of acquisition are averaged. There are several possible

explanations for the early mastery of this category. First, regardless of a particular child's program preferences, all children are exposed to many advertisements unless they watch only public television broadcasting. In a sense, advertisements are the common denominator in children's television viewing.

Second, many advertisements, especially those broadcast during children's programs, are designed expressly to appeal to children. Children's attention may be captured by the fast pace and short length of commercials and the products being advertised. The overall format in which they appear may stand out for children and thus a distinct category may be formed more easily.

Finally, it is possible that advertisements stand out because these bits of the television world interrupt the shows being watched by children and make their favorite characters temporarily disappear from the screen. In our observations of the subjects of this study, we have found that in their second year, the disappearance of characters is a source of consternation. Children become very upset and at times even cry when their favorite television personalities leave the screen. Advertisements may then be identified easily by children as the disruptive part of television which causes shows and their favorite personalities to vanish.

Interestingly, John mastered the advertisement category quite a bit earlier (2:0-2:6) than Kathy and Donny (3:7-3:11). This is puzzling if we consider the three possible explanations of the early acquisition of advertisements described above. John and Donny both watched a great deal of commercial television from 2:0 on, while Kathy primarily watched public broadcasting. This calls the first explanation into question since one would expect John and Donny both to acquire the category earlier than Kathy if the "common denominator of exposure" explanation is accurate.

The second explanation, which focusses on the appeal of advertisements to children, is negated by the fact that other data collected in this study indicates that Kathy was, by far, the most attracted to commercials at a young age. She imitated them, sang their jingles, and became excited by them as early as during her second year. Given this information in conjunction with the second explanation, one would expect Kathy to be the first child to acquire the advertisement category while, in fact, John was the first.

Finally, the last explanation, which considers advertisements as the most easily recognizable category due to its disruptive nature, is also called into question by other data collected in this study. Kathy, as well as being the child who always loved commercials, was also the one who grew most attached to television characters and who became most distraught when they left the screen. Were this third explanation of the early mastery of advertisement to hold true, we would again expect Kathy to be the first child to acquire this category.

There remain several alternative possibilities. It is possible that a combination of all three of the explanations discussed may be accurate and reflected in the following ways. Donny, though exposed to much commercial broadcasting, was not highly attracted to advertisements or attached to characters. Kathy, though not exposed to much commercial broadcasting was highly attracted to advertisements and characters, while John may have combined all three elements by being exposed to many advertisements, being attracted to them, and being attached to television personalities. This additive theory of acquisition would account for the order in which the three children acquired the advertisement category.

Confusion regarding dual items will be discussed separately under acquisition of cartoons since animated advertisements were the only duals involved in this category.

B. Cartoons and Sesame Street

John and Donny distinguished cartoons earlier than they did Sesame Street, while Kathy distinguished them later than she did Sesame Street. This finding conforms to the hypothesis that more exposure to a type of program facilitates the acquisition of that category. Both John and Donny watched cartoons from age two on, for several hours every weekday and for even more on weekends. Even if they had watched Sesame Street every day as well (and the evidence indicates that they generally did), the number of hours of Sesame Street viewed still would not have approached the number of cartoon hours viewed. Kathy, on the other hand, was not allowed to watch cartoons until she was over 3 years old, while she watched Sesame Street religiously and loved it from the age of 2 years. If we adhere to the "exposure hypothesis" this would account for Kathy's relatively earlier acquisition of Sesame Street and her later acquisition of cartoons.

Another explanation for the earlier acquisition of the cartoon category by the boys may involve the format, visual appearance, or organization of the two types of shows. Cartoons are animated and their visual appearance is thus radically different from that of any other type of show. This feature would seem to make cartoons more easily distinguishable in that children would need only glance at the screen or at a picture of a show, attend to its visual features, identify it as animated, and label it a cartoon.

Further evidence supporting this explanation is found in the majority of the dual items. Regardless of the category in which an animated item actually belonged (Sesame Street, advertisements or cartoons), until the children were past age 4:0, it was consistently labelled a cartoon. For example, an animated advertisement for cereal or dog food, though containing the information provided by advertisements, was put in the cartoon category, and an animated Sesame Street bit which was clearly (at least to an adult) designed to teach number of letters was also put in the cartoon category. The visual appearance of animated items was salient for all three children

while the content or information provided within that visual and/or audio format were secondary and often even ignored.

Furthermore, the fact that Sesame Street was acquired later than cartoons may be explained by its use of a magazine format incorporating segments with diverse visual formats and character types. Although children may watch this show regularly from a very early age, it is not surprising that they have difficulty identifying its many different elements as being part of a single show.

C. Children's Shows

The fact that the category of children's shows is not acquired until late and then is defined egocentrically as the shows watched by the child, is logical. As will be seen in a later section of this report, children do not grasp abstract concepts (such as producer's intent or target audience) until they are well past the age of 4. This explains children's definition of children's shows as "shows I watch" and their definition of adult shows as "shows Mommy and Daddy watch." They are cognitively unable to transcend their personal experience to consider the motives or intentions of such remote figures as producers. In addition, children's shows may be thought of as a "super-category," one which contains a heterogeneous mixture of all the shows designed for and watched by children. In the first few years, children are attempting to sort out the confusing elements of the television world. They are concentrating on making distinctions between shows and thus are looking for the differences between them. It follows then that children are initially more aware of the obvious differences between shows such as Happy Days and the Flintstones (e.g., non-animated vs. animated) and thus have difficulty grouping them on the relatively abstract similarity of children's shows.

D. News and Adult Shows

The news and adult show categories are both grasped only after the children have reached age 4. The "exposure" explanation would appear to be the most obvious here. All children had an aversion to watching the news. They openly stated their dislike of it and avoided it as much as possible, a fact which implies that they must have recognized the news when it came on the screen. When shown pictures of various types of programming, however, children often could not identify the news shows or demonstrated confusion between news shows and commercials. Perhaps while viewing, children were so quick to turn away from news shows, that they did not absorb their entire format. Also, certain aspects of these otherwise different program types are similar such as authoritative male adult voice-overs. The evidence indicates that children also did not absorb news

content fully until age 4:5 at which point they were able to describe its purpose and its relationship to the real world. This would explain the later acquisition of the news category.

Similarly, adult shows are generally not watched by these preschool aged children. Their definition of adult shows as "shows Mommy and Daddy watch" is understandable given younger children's inability to comprehend the concept of producer's intent. Finally, the category of adult shows, like that of children's shows, is a "super-category" and is thus more difficult for young children to distinguish and define.

VI. Other Factors in Children's Organization of the Television World: Qualitative Results and Discussion

A. Television Characters

Television characters appear to play a large role in the development of children's understanding of the organization of the television world. Qualitative changes in children's perceptions of television personalities as organizing elements are described below.

1. Age two to three years. During this year, children appear to concentrate on and become attached to television characters, but do not necessarily link characters to specific shows. Instead, they believe that characters may appear at any time or any place within the television world. For example, John, at 2:6, says that Sesame Street characters can be on cartoons; Kathy, at 2:4, says that Mr. Rogers is on Sesame Street; and at 2:5 she says that Roosevelt Franklin (a Sesame Street muppet) is on Sesame Street, the news, a game show, and Mr. Rogers. Although children may simply be demonstrating a tendency to agree with the experimenter's questions, it seems that boundaries between television shows are not recognized and characters do not have specific programs to which they belong. They are simply conceived of as individual, attractive entities within the general, confusing world of television.

At the same time, there is evidence that although children perceive characters as roaming throughout television-land, they paradoxically focus upon prototypical and preferred characters in identifying specific television shows. For example, Kathy, at 2:1, identifies Sesame Street correctly only when she is shown puppets or animation, and at 2:10, when she sees Flip Wilson, a real, perhaps unfamiliar person on Sesame Street, she says that the show is not Sesame Street. Donny, at 2:11, when asked to sort out all the characters who belong on Sesame Street from a pile of pictures of various television personalities, chooses only the pictures of puppets, excluding the real people who in fact comprise a large portion of the show.

While children are confused about the status of television characters, these characters are obviously of great importance in the 2 year old's conception of the world of television. Any deviation from the regular

cast bewilders the child and causes him to deny the show's identity. Concurrently, children's conceptions of individual shows and the boundaries between them are still so insecure that characters are perceived as independent of their shows and able to appear on any channel at any time. Thus, Roosevelt Franklin can appear on Mister Rogers, but if this were to occur, the child might very well deny that the show was, in fact, Mister Rogers.

2. Age three to four years. From the category acquisition data, the child at this age appears to be struggling both to form boundaries between specific programs and to acquire program categories. Although little data regarding characters was collected during this year, the available evidence suggests that characters are now perceived as belonging to specific programs. Donny, at 3:5, for example, correctly listed the characters in the Flintstones and Family Affair, and John, when he saw Big Bird and Grover on a game show at 3:2, assured his mother that they would return to Sesame Street. These examples contrast those presented for the children between ages two and three years. During the earlier period, the children believed that characters appear on many different shows, and when characters such as Fig Bird appeared on a different show such as a game show, children denied the show's identity as a game show. Characters are perceived as show-specific during this next year of development and shows are identified, not only through attractive characters, but by other elements (e.g., format, content) as well.

3. Age four to five years. Children appear confused again during this year as to the nature of the link between characters and programs. As may be derived from the category acquisition data, all three children acquire the major program categories during this year. By definition, this implies that children recognize programs such as Sesame Street, the news, or commercials, as separate television entities. We saw that during the third year children associate specific characters with separate program entities. By the fourth year, new problems have arisen in the perception of these links.

At 4:6, following a question from the experimenter, John said that Batman could not be on Sesame Street. When asked at the same age whether the Incredible Hulk could be on Sesame Street, however, John said that he could. Kathy, at the same age, was surprised when she saw Big Bird on Hollywood Squares and when asked whether Fonzie from Happy Days could be on too, she replied that he could not.

There appear to be several elements to be assimilated by the child here. First, most television characters do belong to specific shows and children seem to have grasped this by age four. Television characters, however, are all on film and therefore potentially can be filmed on any show, on any channel and with any other characters, be they animated, real, or puppets. This is where children, even at age four or five, encounter difficulties. By age four they know that characters are primarily associated with one show, but they often encounter televised situations in

which a character appears on a show other than his own. Unaware of the mechanics and technology behind television production, they have trouble recognizing the flexible link between characters and their shows, and are hesitant to suggest that such situations--a character appearing on several shows--can occur. Such situations violate their newly formed boundaries between programs and program types.

John's contradictory claim that Batman could not be on Sesame Street while the Incredible Hulk could, highlights the many elements affecting the unravelling of television's complexity. John knows that Batman appears on Superfriends while the Incredible Hulk appears on the Incredible Hulk, two separate shows. He presumably has never seen either character on Sesame Street, yet he says that one can be on it and the other cannot. This is puzzling; however there are several possible explanations. Perhaps he believes that the Incredible Hulk is stronger than Batman and thus could break through the boundaries between shows while Batman could not. Perhaps he believes that since Batman is animated on Superfriends while the Incredible Hulk is played by a real person, the Incredible Hulk could be more easily accommodated on Sesame Street where there are more real people characters than there are animated ones. Perhaps since Sesame Street and the Incredible Hulk are John's favorite shows, and Superfriends, though well-liked, is watched less often, he can more easily conceive of combining Sesame Street and the Incredible Hulk than Sesame Street and Superfriends.

Without further study, we cannot assume that any of the above reasons is the correct one. We do know, however, that characters play a large role in children's organization of the world of television and that their salience contributes to both the confusion about and the eventual understanding of this organization. A forthcoming technical report from this longitudinal study should shed further light on this issue (Robinson and Jaglom, forthcoming).

B. Producer's Intent/Target Audiences

We have seen that by age 5, children have acquired several categories in which to organize the many types of television fare. The data suggests, however, that although certain types of programming may be clearly distinguished from others, their various purposes or producer's intentions may not be understood.

Advertisements (acquired 3:0-3:6) are the first correctly distinguished types of programming. We have evidence, however, that as late as age 5, children do not understand that the primary purpose of commercials is selling products. At age 3, as reported previously (Jaglom et al., 1979), children recognize that advertised products exist and can be purchased in the real world. Children at this age make frequent requests for advertised products. The data include many examples during the children's third year of "I want one," "I'm going to get that," or

"Can I have one of those?" Yet when asked what commercials do, children say that they "do nothing" (Donny, 5:2) and that they are "for no one and for nothing" (John, 4:6). Although there are some comments in which children demonstrate some understanding of the intent of commercials--"Want you to eat them" [Hershey's chocolate (John, 4:9)], or they "tell you what you can get and what's on" (Donny, 4:3)--there are as many examples which clearly indicate a lack of such understanding--"Ads do not want you to buy anything" (Kathy, 4:10), "That bike is not for you to buy" (John, 4:9), and "You can't get those cookies" (John, 5:1). While this denial of the selling motive of commercials may reflect or mimic parental statements that advertised products are not necessarily available to children, it may also reflect a genuine misunderstanding.

The purpose of previews, a special type of advertisement which attempts to "sell" television programming, seems to be grasped by children at an earlier age than the purpose of advertisements for goods and services. Children demonstrate an understanding of the purpose of previews by late in their third year. They are able to explain the fact that previews tell you what a show will be about and when it will be on. The earlier understanding of this particular type of advertisement may be explained by the fact that children are directly affected by them. If a special is on instead of the child's favorite show, the child is likely to notice, while if there is a car rebate advertising campaign, the child is just as likely not to notice. In addition, previews may be thought of as hypotheses which are confirmed by subsequent data. A preview announces a show, the show appears, and once it has appeared, the preview no longer appears. This is a straightforward, easily identifiable sequence of events.

Children seem to understand the purpose of the news at the same time as they master the category. By age 4:5, around the same time that children acquire the news category, children relate the news to the real world and appear to understand its role--providing information about the real world. For example, Donny, at 4:7, said that the news "tells real city life, the weather, dangerous things like cigarettes" and John, at 4:5, said that the news is about "real guys, the weather. It's a real show."

As late as age 5, children define the categories "children's shows" and "adult shows" according to what they watch and what their parents watch. Although application of this definition may often lead to a correct classification, it is egocentric, and does not take the producer's intent into account. At other times, use of this definition leads to incorrect categorizations. For example, if a child watches soap operas with his mother every day, he will put soap operas into both the children's and the adult show categories, even though soap operas are not intended for children, but solely for adult audiences. Another confusion about the purposes of shows emerged when the children were asked whether Sesame Street, the Electric Company, and Mr. Rogers try to teach. Donny and Kathy both answered negatively during their fourth year and John said that Sesame

Street and Electric Company teach the alphabet and counting, while Mr. Rogers does not teach. He apparently noticed the explicit teaching bits in the first two programs, but failed to appreciate Mr. Rogers' more subtle, quieter tutorial approaches.

The findings suggest that children may organize the world of television in terms of certain program categories by the age of three and four, but that they use concrete elements such as characters, visual and audio characteristics, or egocentric criteria to define these categories. More abstract concepts such as producer's intent and target audience are more difficult for children and are only begun to be comprehended after age four.

C. Temporal Organization of Television

Within this category were included data indicating children's knowledge of television schedules in terms of the sequences of shows, relevance to their own lives or personal schedules (e.g., Sesame Street is on during dinner), and their recognition of beginnings, endings, and interruptions (e.g., commercials breaks) of shows. These data provide supplementary, qualitative information to complete the organizational scheme provided by the category acquisition data.

1. Age two to three years. During this year, children's conception of television's temporal organization is quite undeveloped. Television shows are perceived as continuously available throughout the day, show endings are often not recognized, and commercials are confused with endings. Children request shows at the wrong time of day (Kathy, 2:2), think that their favorite shows can be put on whenever they want (Kathy, 2:8 and 2:11), and request that parents replay shows which they enjoyed (Donny, 2:5). In addition, children at this age are concerned by the disappearance of characters from the screen. They appear to reassure themselves with statements such as "they'll be right back" (which are provided audio-visually on children's shows) when shows are over and when they are interrupted by commercial breaks.

Eventually, children between the ages of two and three do begin to know the sequence in which their favorite television shows appear, but this knowledge is mostly limited to those shows which they watch most frequently. Interestingly, Kathy's conception of television sequences includes not only the order in which whole shows appear, but also, more specifically, the order in which the characters appear. At 2:4, when asked the order in which shows appear, she said "Oh, soap, then Sesame Street, then Big Bird, then Grover, then everybody else." This reinforces points discussed regarding children's focus on characters at this age and their conception of characters as primary and discrete elements of television content.

2. Age three to four years. At this age, children still appear quite confused as to the timing and beginnings and endings or boundaries of

television shows. John, at 3:8, still says that Sesame Street is on all day. Kathy, at 3:3, still asks her mother to put on particular shows regardless of the time and at 3:11 is still perplexed by the disappearance of characters from the screen, saying "Hey, where'd they go?" Children have continued difficulty accepting the fact that they cannot control this medium, that the timing and availability of their favorite fare is completely out of their hands and even out of the hands of their parents.

Concurrently, however, children begin to recognize the beginnings and endings of their favorite shows, especially when, as for Sesame Street, a theme song is heard. They also begin to expand their knowledge of show schedules by associating particular shows with general times of day. They note previews which inform them of scheduling changes and begin to make comments such as "They're coming back" only at such appropriate times as during commercial breaks. Just as children are beginning to establish categories for and boundaries between types of television fare, during this year they are also beginning to recognize temporal boundaries and rules which organize and regulate the television world.

3. Age four to five years. Children display far more specific knowledge of television scheduling. They are able to make distinctions between shows which are on every day (e.g., the news), those which are not (e.g., basketball), and specials which are only on rarely, taking the place of regularly scheduled shows. They are able to identify Peanuts specials as "night cartoons," and Flintstones as "day cartoons" (Donny, 5:0), and to state the specific days and times at which various programs are broadcast (John, 4:6; Kathy, 4:10; Donny, 4:4).

Children also have incorporated the mutually exclusive relationship of advertisements to shows, making such statements as "when shows come off, ads come on" (Donny, 4:4; John, 4:6). Concurrently, they correctly identify those commercials which interrupt a program and those which signal the end of one program and the beginning of another. At this age, children are consistently correct in their recognition of show beginnings and endings, expanding the cues they use from songs to include logos, station signals, credits, and advertisements.

By the age of 5, children have become quite sophisticated in their comprehension of the temporal organization of the television world. They have been exposed to a great deal of television fare and with considerably success have unravelled the confusion of show sequences, interruptions, and the connections between show times and daily real world times and events.

VII. Summary

A. Age Two to Three Years

During the first year of data collection for this study, the 2 year old's lack of a classification system for television material was readily

apparent. Children were unable to sort programs consistently into any of the six categories being examined. Furthermore, they exhibited no understanding of the differing intent of various types of programming or of the temporal organization of program content. Although these 2 year olds had some knowledge of the sequence in which their favorite shows appeared, they nonetheless believed that their shows were always available, were confused by commercial interruptions, and did not recognize the fact that a show had ended and another begun. While television characters were used by children in identifying shows, they were perceived as being apt to appear on any show or channel at any time. Thus, the television world to a 2 year old is a confused conglomerate of images without coherent boundaries or distinguishing features, but studded with attractive characters and preferred shows.

B. Age Three to Four Years

During the children's third year (second year of observation), a classification and boundary system for television began to emerge. Three categories of television shows--advertisements, cartoons and Sesame Street--were mastered during this year. These are the primary categories to which children of this age are exposed and their acquisition is an important step in accomplishing the task of sorting out the various elements of the television world. Boundaries between shows, and types of shows, are established during this year. The continuous flickering of electronic images on the television screen are frozen in the mind of the 3 year old child long enough to allow her to begin to differentiate and classify them. The child has begun to recognize the beginnings and endings of shows, to state the general time of day at which specific shows appear, to attend to information provided by previews and to recognize commercial interruptions. Television characters are no longer perceived as free-floating, but are linked to specific programs instead.

Certain confusions remain for the 3 year old. Characters and their shows are perceived as being inseparable, characters are not considered capable of being transferred to other programs. Furthermore, 3 year olds still expect to dictate the timing of certain shows in spite of their expanded knowledge of television's temporal organization.

C. Age Four to Five Years

During this final year of data collection, the subjects mastered the recognition of the other three adult-perceived categories examined--those of the news, children's shows, and adult shows. Children have acquired a rudimentary classification schema into which they divide the world of television. They have not acquired more sophisticated, complex distinctions such as that between a situation comedy and a drama or a soap opera, but they have made substantial progress from the overwhelming confusion with which they perceived the world of television as 2 year olds. They have absorbed the purpose of the news and its relationship to the real world. They

have also become more specific and less egocentric in their understanding of television's scheduling. They have become able to state the specific days and times of certain shows, to describe the superficial relationship between advertisements and shows, and to recognize show beginnings and endings, using many cues such as station signals, logos, credits, music, and advertisements.

Children at age four are still confused, however, by the nature of the link between characters and specific programs, giving contradictory answers to questions dealing with this issue. They have not acquired an understanding of the purpose of advertisements or of such concepts as target audience or producer's intent.

VIII. Conclusion

Children, by age five, have taken many important steps towards organizing the world of television. There are, however, many discriminations which remain to be made and concepts which remain to be grasped.

Although the 5 year old has mastered the identification of six major program categories examined in this study, he is unable to make finer distinctions between types of shows falling within those categories. One would expect that with increased exposure to many children's and adult shows, children would gradually recognize the differences between shows which make one laugh, shows which are scary, and shows which teach. In recognizing these differences, children would, in effect, be discriminating between comedies, adventures, and documentaries or educational shows. These discriminations would also begin to suggest some understanding of the concept of producer's intent and show purposes. The intent of producers and the purposes of shows are, however, abstract non-visible aspects or concepts involving the understanding of another's motives, concepts which children would not be expected to master before the age of eight or nine.

Children's confusion as to the link between characters and programs should be resolved once they acquired a better understanding of the mechanics and technology of the television world. This knowledge would help them to understand the seemingly contradictory fact that characters are primarily linked with one show, but may also appear on other shows. They would realize that the relationship between an individual and the shows in which he appears is not fixed.

Finally, it is instructive to link the findings of this report with the findings of a previous report (Jaglom, Wilder, and Fagre, 1979) on children's abilities to relate what they see on television to their real life experience. Not only is the 2 year old unable to make distinctions between types of shows within the television world, but he also has difficulty perceiving the boundary between the television and the real world. Just as he believes that characters may appear at any time or place within the television world, so he believes that television characters may appear in his

own bedroom, outside the television world altogether. Children of this age are primarily concerned with similarities or correspondences between the two worlds and between shows within television, not with the differences or distinctions.

The 3 year old acquires the ability to make distinctions. She recognizes the differences between advertisements, cartoons and Sesame Street and her knowledge of television scheduling expands. The temporal boundaries and rules which organize the television world begin to be recognized. Simultaneously, the 3 year old recognizes the lack of an immediate, total correspondence between television and real life. Differences between the two realms are noticed (e.g., worms on television talk, but not in real life, or it may be nighttime on television when in real life it is the middle of the day). Similarly, children become aware of distinctions within the world of television. These distinctions are employed by the child in forming a classification system to order the television world; and in gaining a more realistic or accurate conception of the boundary separating the world of television from that of real life.

By the age of five, children have made further distinctions in classifying the television world, have acquired an understanding of television's schedule in terms of real world time, and have absorbed the purpose of the news--the show type most directly related to the real world. By the same token, children of this age also perceive the subtleties involved in the relationship between television and the real world. They have become aware of the fact that there may be both similarities and differences between them, that the two worlds may at times relate directly to and influence each other, while at other times they may be completely divergent.

Thus, the findings of these two reports converge to provide a picture not only of children's classification of shows within the television world, but also of their understanding of the way this system and world relates to the world outside television's electronic images.

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Harvard Project Zero is a basic research program at the Harvard Graduate School of Education. Its original charge was to study creation and comprehension in the arts and means toward better art education. A prime objective throughout the Project's history has been to provide a sound theoretical and experimental base for effective education of artists and audiences. The Project began in the fall of 1967 in response to the frank admission that, however much is known about how to educate in science and how to evaluate scientific work, practically nothing is known about the underlying principles of how to teach and evaluate in art. From that challenging "zero" the Project took its name and tasks. Our research methods include rigorous conceptual analysis, investigation of relevant literature, design and execution of key experiments in psychology and other fields, visits to arts education institutions, and application of results to proposing and assessing programs in art education.

Project founder and former director Nelson Goodman's book Languages of Art (Bobbs-Merrill, 1968) has provided important direction in our effort to isolate and investigate basic skills. This work sets forth a "theory of symbols," a broad treatment of elements of communication, embracing words, gestures, diagrams, paintings, poems, musical scores, and so on. Almost all the psychological processes under consideration in our studies of the arts involve extensive operation with and upon symbols of various kinds. These symbols are not merely instruments of communication, but also instruments of cognition, tools in terms of which the mind deals with the perceptual world.

Some of our research has examined the psychological implications of the theoretical models of symbol systems introduced in Languages of Art. For instance, one question is whether different information processing skills are necessary to produce effective art within linguistic, versus nonlinguistic, symbol systems. Another, complementary approach emphasizes problem solving and search strategies in the moment-to-moment perception and production of a work of art. How do subjects search for rhyme words in poetry or explore alternative placements of pieces in collage? A favorite means of developing and testing new models is through the study of errors. By using impoverished or ambiguous stimuli, assigning tasks somewhat too difficult for a subject, or working with brain-damaged subjects, one can elicit patterns of error-making which suggest hypotheses and select between alternative models of a process. These approaches characterize many of the Project's investigations mentioned below in a list of Project members and their particular interests.

Though the development of actual curricula in arts education is not a primary concern, the Project does contribute to the field of practical education. Project members have responded to inquiries and requests to comment on curricula from teachers in the field. Establishment of Harvard Summer School's Institute in Arts Administration resulted from the Project's reply to an inquiry from the director of the Harvard Summer School, and members of the Project staff cooperated in planning the Institute, in preparing material, and in the actual teaching. Consideration consultation has been provided to schools, museums, television, and a variety of arts institutions by members of the Project.

The Project has also sponsored a series of lecture-performances in various media, designed to give the general public and prospective public school teachers and administrators better insight into and attitudes towards artists and the arts. As the series title "Art in the Making" suggests, the purpose of the lecture-demonstrations was to reveal something of the artist's way of working, rather than to display his products. In the presence of an audience free to ask questions, each artist explored alternatives, exposed some constraints of his medium, compared his various efforts, and searched for the right effect, choice by choice.

While maintaining a major concern with the arts and art education, the Project, under its current co-directors, has considerably broadened its field of inquiry and now investigates a whole range of topics in the area of cognitive psychology. One part of the Project has focussed particularly on developmental studies. Among the topics currently being investigated are the emergence of symbolic capacities during the first years of life; the development of literary abilities, specifically the capacity to produce and appreciate metaphors and stories; children's understandings of the various worlds presented on television; the emergence of drawing skills; and the breakdown of various symbol using capacities under various forms of brain damage. The other part of the Project has concentrated on studies in the areas of cognitive and perceptual psychology, ones which utilize both normal adult subjects and gifted artists. Among the topics investigated recently have been critical judgment and the sources of critical disagreement in adults; the thought processes of professional and amateur poets and painters in developing works; the role of geometric principles in visual perception and picture perception particularly; reasoning about everyday matters and the logical difficulties people encounter.

A list of recent papers which can be purchased from the Project is available upon request.